

1 THE EMBODIMENTS OF THE INVENTION IN WHICH AN
2 EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS
3 FOLLOWS:

4
5 1. An insert for use in a ball and seat valve finding application in a
6 reciprocating downhole pump, comprising:

7 a cylindrical tubular body forming a through-bore and having vertically
8 spaced apart top and bottom rings joined by circumferentially spaced apart
9 ribs; the rings and ribs combining to form side openings;

10 the ribs supporting inwardly protruding flanges having upper inner ends
11 arching together toward the longitudinal axis of the body, the flanges each
12 thinning upwardly and inwardly; and

13 an upwardly directed, elongate reinforcing member connected with the
14 flanges at their upper inner ends, the reinforcing member and flanges
15 protruding above the upper ring;

16 the flanges and reinforcing member combining to form a semi-spherical
17 ball stop.

18
19 2. The insert as set forth in claim 1 wherein:

20 the ribs are inclined and shaped to form helically configured side
21 openings; and

22 the flanges are helically directed.

- 1 3. The insert as set forth in claim 2 wherein:
- 2 the flanges correspond at their bases with the shaping of the ribs.